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(54) **CALIBRATION CORRELATION FOR CALIBRATION ASSEMBLY HAVING ELECTROMAGNETIC READ HEAD**

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(58) **Field of Classification Search**

CPC G01N 27/72; G01R 35/00

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See application file for complete search history.

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(57) **ABSTRACT**

According to one embodiment a method of performing a calibration correlation test for a calibration assembly includes sweeping a head module having a magnetic read sensor along a y-axis of the calibration assembly. The calibration assembly has at least one calibration trench having at least one nanoparticle at a known y-axis location in the calibration trench and the magnetic properties are known for the at least one nanoparticle. A read response of the at least one nanoparticles is obtained from the magnetic read sensor and a correlation is determined from the read response. The correlation of the read response is compared to a correlation threshold. The read response correlation is stored in memory in response to determining that the correlation of the read response is greater than the correlation threshold. When the correlation of the read response is not greater than the correlation threshold, a correlation test error is indicated.

7 Claims, 15 Drawing Sheets

